

SERIAL 06096 S LOOP DETECTOR INSTALLATION SERVICES (NIGP 96884)

DATE OF LAST REVISION: October 06, 2006 CONTRACT END DATE: October 31, 2009

CONTRACT PERIOD THROUGH OCTOBER 31, 2009

TO: All Departments

FROM: Department of Materials Management

SUBJECT: Contract for **LOOP DETECTOR INSTALLATION SERVICES (NIP 96884)**

Attached to this letter is published an effective purchasing contract for products and/or services to be supplied to Maricopa County activities as awarded by Maricopa County on **October 12, 2006**.

All purchases of products and/or services listed on the attached pages of this letter are to be obtained from the vendor holding the contract. Individuals are responsible to the vendor for purchases made outside of contracts. The contract period is indicated above.

Wes Baysinger, Director
Materials Management

WP/ks
Attach

Copy to: Clerk of the Board
 Jim Baker, MCDOT
 Kathy Sicard, Materials Management

(Please remove Serial 02004-SC from your contract notebooks)

INVITATION FOR BID FOR: LOOP DETECTOR INSTALLATION SERVICES (NIGP CODE 96882)

1.0 INTENT:

The intent of this Invitation for Bids is to establish a contract to provide service, material, and equipment for Loop Detector Installation work to be furnished to Maricopa County Department of Transportation and other State, County and Municipal Agencies as covered by purchase order only. Also included are blanket discounts for related supplies as covered by current pricing documents. Amendments, supplements and/or revisions will be effective upon receipt and approval of notice to the Department of Materials Management.

2.0 TECHNICAL SPECIFICATIONS:

2.1 SCOPE OF WORK:

- 2.1.1 Maricopa County, in its function as Procurement Agency for the AZTech Public/Private Partnership is soliciting bids from qualified contractors to furnish all necessary labor, tools, equipment, parts and supplies to perform the installation of 6' x 6' and other loop detectors at various locations throughout Maricopa County.
- 2.1.2 This Invitation for Bids also solicits contractors to submit bids in the installation of Quadrupole Loops in various sizes as specified in the pricing page. These installations will be on an on-call, as needed basis.
- 2.1.3 The contractor shall extend this pricing to the respective cities for additional work or furnish work the respective agency may request.
- 2.1.4 Successful contractor or contractors shall be required to obtain all applicable permits and licenses (including right-of-way permits) and to comply with all Federal, State and Local laws, ordinances, regulations and safety standards.
- 2.1.5 Contractors shall be required to obtain and comply with the applicable detector loop specifications of the agency that has jurisdiction where the detector loops are being installed.

2.2 WORK LOCATION:

Loop Detector installations shall be performed according to an approved State, County or Municipal Installation Work Order as per section 2.3, Work Schedule.

2.3 WORK SCHEDULE:

- 2.3.1 The work schedule shall be specified by the State, County or City Traffic Engineer of each respective jurisdiction and/or by the Contract Administrators' authorized representative.
- 2.3.2 The State, County or City reserves the right to make minor adjustments in the schedule at any time in order to avoid conflict with roadway construction or maintenance operations, or to better serve the agency needs.

Work hours shall conform to the respective agencies' barricading manual where the work is being performed.

- 2.3.3 No work shall commence without prior written approval of the State, County or Municipal Transportation Department who has jurisdiction where the work is being completed.

- 2.3.4 Within five (5) working days of receipt of an approved County Loop Detector Installation Work Order, the Contractor shall provide the County with a confirming work schedule. The confirmation may be submitted by FAX, voice, phone or personal visit.

The schedule shall include number of workers, date of Blue Stake, Blue Stake Log Number, date and time that work shall start and anticipated completion time. Upon approval by the Department, the Contractor may implement the approved schedule.

- 2.3.5 The Contractor shall adhere to the approved work schedule and shall complete all routine work during the calendar week in which it is scheduled unless circumstances occur which are beyond the control of the Contractor. All scheduled work **NOT** completed during the week scheduled shall be reported to the Department in writing on the first work day of the following week. The report shall include an explanation of **WHY** the work was not completed and plans for getting the work on schedule.

2.4 **WORK DETAILS:**

2.4.1 General:

Detectors shall be installed as shown on the installation plans, as shown in the Standard Drawings, and as directed by the Engineer. The installation of the loop detectors shall be such that the operation shall not be affected by temperature changes, water, ice, rain, snow, chemicals, or electromagnetic noise. Contractor shall install, test, and have the loop detectors operational no later than sixty (60) days after issue of notice to proceed.

2.4.2 Hold Down Tabs:

Hold down tabs shall be used at the option of the agency responsible of the maintenance of the detector loop. This option shall be called out on the plan sets where applicable.

2.4.3 Saw Cut Sealant:

Saw cuts shall be sealed with an approved sealant. All slots cut in the pavement shall be blown out with a high-pressure stream of water and dried, before installing conductors.

After the conductors are installed in the slots, the slots shall be filled to within 1/8 inch of the pavement surface with the sealant. Before the sealant sets up, the surplus sealant shall be removed from the road surface without the use of solvents. City of Phoenix loop installations shall be filled flush with the pavement surface **(See Phoenix Loop Installation Supplement)**.

The handling of the sealant and the filling of the saw cut shall be in accordance with the directions of the manufacturer. Blotter sand shall be applied as directed by the Engineer.

2.4.4 Splices:

The detector sensor conductors shall be spliced to the detector lead-in cable in the adjacent pull box.

Detector lead-in cables shall run continuous and unspliced to the controller cabinet. Detector lead-in cables shall not be spliced without the approval of the Engineer.

All detector wire splices shall be soldered using resin core solder with 60 percent tin and 40 percent lead. The splices shall be sealed from moisture with self-encapsulating fit caps. When heated, the fit cap's inner thermoplastic adhesive shall temporarily melt and the fit cap's outer wall will shrink. A weatherproof bond shall form as a result. **The City of Phoenix Signal Operations group shall complete all Loop splices in the City of Phoenix. (Contact Rich Jeriha @ 495-5885 to coordinate this action).**

The detector lead-in cable shield shall only be grounded on one end in the control cabinet.

2.4.5 Detector Loop Installation Field Tests:

Before and after the saw cut sealant has been installed, the Contractor shall perform an insulation resistance-to-ground test. The insulation resistance-to-ground shall be at least 100 megohms when measured at a voltage between 400 volts and 600 volts D.C.

The Contractor, at no cost to the State, County or Municipality, shall replace any loop detector that does not meet the above requirement or cannot be tuned to the Engineer's satisfaction.

2.4.6 Conduit Installations:

Conduits in protected areas such as behind curbs, in sidewalks, etc., that are not subject to any vehicular traffic shall be at a minimum depth of 24 inches.

Conduits installed under roadways, driveways or any open areas where it is possible for vehicles to drive, shall be at a minimum depth of 30 inches.

A permanent marker shall be placed on or back of the curb, over loop stub-out.

The Contractor shall place warning tape in all trenches in which new conduit is placed. All warning tape shall be buried at a depth of six to eight inches below the finished grade.

Conduit entering pull boxes shall terminate a minimum of three inches inside the box wall. The conduit shall be between two inches and four inches above the bottom of the pull box and shall be sloped to facilitate pulling of conductors.

Conduit shall be installed under existing pavement by jacking or drilling methods approved by the Engineer.

Open trench excavation across an existing roadway shall not be permitted without the written permission of the Engineer. Jacking and drilling pits shall be kept two feet clear of the edge of the pavement. Pull boxes shall be installed in accordance with the details shown on the project plans and the standard drawings. Pull boxes shall be installed flush with the finished grade.

2.5 **QUALITY CONTROL-MATERIAL:**

2.5.1 **VEHICLE DETECTORS:**

2.5.1.1 **General:**

Detectors shall conform to the minimum acceptable design and operating requirements of these specifications for detecting the presence or passage of vehicles.

2.5.1.2 Loop Detectors:

The detector loop dimension shall be **6' x 6'** or as specified on the plans. The Contractor may bid a 6' diameter round loop as an alternative to the 6' x 6' loop. (If the Contractor bids a round loop, this shall be provided as a supplement to the conventional 6' x 6' loop. The loop shall have four turns of wire unless otherwise noted on the plans.)

2.5.1.2.1 Roadway Loop Detector Wire:

Roadway loop detector wire shall be a factory assembled combination of PVC tubing and wire. Loop detector wire shall be stranded number 14 AWG copper rated at 600 volts with THWN insulation. **All loops are to be wire-in-duct Type wire (Detect-a-duct IMSA 51-5 or approved equal, #14 stranded, inside .25 inch PVC tubing). (See City of Phoenix Supplemental Loop Specification for Phoenix requirements)**

The wire shall be enclosed in a factory extruded PVC flexible tubing by the wire manufacturer. Contractor assembly of the wire in the flexible tubing shall not be acceptable.

2.5.1.2.2 Wire Marking Tags:

Wire marking tags shall conform to ADOT Standard Specification Section 732-2.02.

2.5.2 CABLE:

2.5.2.1 Shielded Cable:

Shielded cable used for loop detector lead-in cable shall be Beldon 8227, Beldon 8404, IMSA 50-2 or an approved equal. **The Contractor shall provide separate conductors for each loop to the control cabinet. (See City of Phoenix Supplemental loop Specification for Phoenix requirements.)**

Conduit warning tape shall be a four mil inert plastic film specially formulated for prolonged use underground. All tape shall be highly resistant to underground alkalis, acids, and other destructive agents found in the soil.

Tape shall have a continuous printed message warning of the location of underground conduits. The message shall be in permanent ink specifically formulated for prolonged underground use and shall bear the words, **“CAUTION--ELECTRIC LINE BURIED BELOW”** in black letters on a red background.

2.6 **INSTALLATION OF ELECTRICAL CONDUIT AND PULL BOXES:**

2.6.1 The Contractor may, at his option and expense, use a larger size conduit than specified provided the larger size is continuous for the entire length of the run from outlet to outlet. Reducing couplings shall not be permitted. Changes in the location and size shown on the installation plans shall be documented by the Contractor and submitted to the Engineer.

2.6.2 The PVC conduit shall be cut square and trimmed to remove all rough edges. Conduit connections shall be of the solvent weld type. Purple primer conforming to the requirements of ASTM F 656 shall be applied to the joined surfaces prior to use of cement.

- 2.6.3 The joint cement shall be the gray PVC cement conforming to the requirements of ASTM D 2564.
- 2.6.4 All PVC conduits shall be stored and handled in an approved manner to minimize ultraviolet deterioration due to exposure to sunlight.
- 2.6.5 Except for factory bends, conduit bends shall have a radius of not less than that specified in the NEC. Conduit shall be bent without crimping or flattening, using the longest radius practicable.

2.7 **SAW CUT SEALANT:**

- 2.7.1 Saw cut sealant shall be a flexible encapsulant intended for sealing and protecting vehicle detector loop wires installed in saw cuts.
- 2.7.2 The encapsulant shall be determined by the agency responsible for the maintenance of the loop (see enclosed supplemental loop specifications). The following represents local agency preference:

City of Phoenix - 3M Epoxy Loop Sealant
City of Glendale - CrafcO Loop Sealant
City of Tempe - CrafcO Loop Sealant
Town of Paradise Valley - CrafcO Loop Sealant
Town of Gilbert - CrafcO Loop Sealant
ADOT - CrafcO Loop Sealant
Maricopa County - CrafcO Loop Sealant **or Tri-American TA-500 Loop Sealant**

2.8 **MAINTENANCE AND PROTECTION OF TRAFFIC:**

- 2.8.1 All traffic shall be maintained through the work area and protected in accordance with the requirements of the Manual on Uniform Traffic Control Devices (as revised, including future revisions), the ADOT Traffic Control Manual for Highway Construction and Maintenance (as revised, including future revisions), Section 701-1 through 701-3 of the 2000 edition ADOT Standard Specifications for Road and Bridge Construction or Section 401 of the Maricopa County Department of Transportation Supplement to the Maricopa Association of Governments' Uniform Standard Specifications for Public Works Construction (as revised, including future revisions). **(Work in the City of Phoenix shall conform to the City of Phoenix Barricade Manual).**

The Manual form Uniform Traffic Control Devices is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. The current price is unknown.

ADOT Traffic Control Manual for Highway Construction and Maintenance Supplement can be purchased from ADOT Records Administration Section, Engineering Records, Room 112F, 1655 W. Jackson Street, Phoenix, AZ 85007. Publication to request is: ADOT Traffic Control Manual Supplement Publication #31-088 and the cost is \$2.00.

These manuals address only minimum standards for traffic control.

If any conditions exist which, in the judgment of the Contract Administrator or their representative, requires additional or special traffic control methods or signing, such traffic control shall be supplied by the Contractor at no additional cost to the Department **except as noted in Pricing Document (ATTACHMENT A).**

All traffic control devices shall be furnished by the Contractor and **MUST** be in place prior to the commencement of work. **No additional payment shall be made for traffic control.**

2.8.2 It is anticipated that certain phases of the work may require lane closures, or other lane restrictions. Lane closures or restrictions shall only be allowed during off peak traffic hours. The Contractor should plan for this possibility in the preparation of this bid package. **The contractor shall coordinate any lane closures or restrictions with the State, County or Municipal agency where the loops are being installed.**

2.8.3 When used, arrow-boards shall conform to the requirements of Section 4.17 of the Traffic and Control Manual. Arrow-boards shall be equipped with automatic and manual light intensity dimmer, which is capable of supplying adequate continuous power for the sign operation over extended periods of time.

2.9 **SUPERVISION:**

A Supervisor shall be on the job-site at all times when loop detector installation operations are taking place. **(See City of Phoenix Procedures for Traffic Signal Work for work to be performed in the City of Phoenix.)**

The Supervisor shall have the authority to make decisions concerning day to day operations and shall assist the Department's appointed representative in making on-site inspections and in coordinating other operational requirements.

The Supervisor shall be competent in matters relating to the specific job tasks involved in this contract and in matters relating to Traffic Control.

2.10 **QUALITY:**

2.10.1 The successful bidder must guarantee his product against any defect in workmanship or materials. Failure to comply with this requirement shall result in immediate return of the merchandise at the expense of the bidder for prompt replacement with merchandise meeting the standards listed herein. Should the bidder not meet this condition, the County shall obtain its requirements on the open market and the contractor shall be obligated to assume excess costs, if applicable.

2.10.2 The materials and supplies called for herein shall be the best of their grade and types, prepared according to the best available standards or accepted formulas, and thoroughly tested and subjected to rigid examination and standardization. Items not meeting these requirements shall be replaced at no cost to the County upon due notice of deficiency.

2.11 **STATE, COUNTY AND MUNICIPAL RESPONSIBILITIES:**

2.11.1 The State, County or Municipality shall approve all materials used in the loop installation.

2.11.2 Layout of loop detectors shall be verified by the State, County or Municipal Traffic Engineer's staff.

2.11.3 The State, County or Municipality shall perform periodic inspections to ensure contract compliance. It is anticipated that these inspections shall be performed on a daily basis.

2.11.4 The Contract Administrator or a designated county representative shall decide all questions, which may arise as to the quality and acceptability of any work performed under the contract.

- 2.11.5 The State, County or Municipality shall obtain random samples of materials delivered to the project. In the event that laboratory tests indicate non-compliance with the specifications outlined in Section 2.10, the contractor shall suspend all operations until corrective actions have been taken and material meets the specification requirements.

2.12 **CONTRACTOR'S RESPONSIBILITY:**

- 2.12.1 The Contractor shall have one (1) full time supervisor at the work site at all times work is being performed. The Supervisor shall have authority to make decisions concerning day to day loop detector installation operations.
- 2.12.2 Contractor shall **NOT** clean out trucks, bituminous trailers or hoses within the State, County or Municipal right-of-ways. Excess materials of any kind shall not be disposed of within any right-of-way.
- 2.12.3 The Contractor shall give the State, County or Municipality, three (3) working days advance notice prior to loop construction. **(The City of Phoenix requires 10 working days advance notice prior to loop construction)**
- 2.12.4 Contractor shall comply with Arizona Blue Stake Law. A.R.S. Chapter 2, Article 6.3, Section 40-360.21, 22, 23, 24, 25, 26, 27, 28, 30 and 31.
- 2.12.5 Any damage done to existing loops, conduits, conductors, or other signal equipment shall be replaced by and at the Contractor's expense, within 48 hours.
- 2.12.6 If damage occurs to the traffic signal, the damage shall be reported to the State, County or Municipal Signal Shop immediately (A list of contact persons for the respective agencies shall be available at the post award conference).
- The Contractor shall be responsible to repair the damage immediately. A Police Officer shall be on site while any trenching is taking place within 200 feet of an arterial intersection. The Contractor may omit this requirement if approved by the State, County or Municipal agency that has jurisdiction where the work is being completed.
- 2.12.7 The Contractor shall submit to the State, County and Municipalities a complete list of materials Contractor proposes to incorporate into the project indicating brand or trade names, identification numbers, type and quantity. No material shall be ordered or installed without the approval of the State, County or Municipality.
- 2.12.8 The Contractor shall have a level II, IMSA Certified technician or a journeyman electrician on site at all times during construction. (See Phoenix supplement for specific requirements).

2.13 **SAFETY:**

- 2.13.1 The Contractor shall implement a Safety Plan to comply with the OSHA requirements and the State of Arizona Occupational Safety Standards.
- 2.13.2 Contractor's employees shall not park privately owned vehicles on the job-site. Contractor's vehicles parked at the job-site shall be in conformance with the requirements set forth in Section 2.8, MAINTENANCE AND PROTECTION OF TRAFFIC.
- 2.13.3 All Contractor personnel shall wear white hard hats, of an approved type, and approved high visibility red or orange shirts or vests while working within the contract area limits. Safety vests shall be replaced at any time that their visibility is reduced due to fading, becoming soiled or any other reasons.

2.14 RECORDS:

The Contractor shall keep a daily log of job progress. The log shall include date, time and location of start, traffic control devices used, events regarding days' progress (i.e., excavation, backfill, equipment, delivery delay, etc.) The complete report shall be delivered to the Contract Administrator's designated representative at the conclusion of each day of operation.

2.15 WARRANTY:

The Contractor shall warrant materials and installation of all loop conductors, lead-ins and conduits for a period of twelve (12) months after installation and acceptance. Warranty repair and/or replacement will be performed at no additional charge to the using Agency. All warranty periods shall begin upon acceptance by the using Agency.

**2.16 FOLLOWING PAGES – CITY OF PHOENIX SUPPLEMENTAL SPECIFICATIONS
“PROCEDURES FOR TRAFFIC SIGNAL WORK”**



City of Phoenix

TO:

DATE: September 30, 1997

FROM: Street Transportation Department
Operations Division, Traffic Signal Section

SUBJECT: PROCEDURES FOR TRAFFIC SIGNAL WORK

SCOPE

The following procedures shall be the sole responsibility of private developers and/or private contractors constructing or relocating City of Phoenix traffic signal equipment, except as noted. These procedures are in addition to other applicable specifications and policies of the City of Phoenix, Maricopa Association of Governments, and the Arizona Department of Transportation.

PROCEDURES

1. The City of Phoenix, Traffic Signal Shop (262-6733), shall be notified ten (10) working days prior to beginning any traffic signal work.
2. Existing traffic signal equipment shall remain operational and in full view of the intended traffic at all times until activation of new equipment. If necessary, temporary overhead cable shall be provided to maintain operation of signal equipment, as stated in Section V of the City Traffic Barricade Manual.
3. Underground conduit (including electrical conductors), junction boxes, controller foundations and pole foundations shall be installed as indicated on the approved project plans. Concrete shall be Class A, in accordance with Section 502 of the Standard Specifications of the City. Pole foundations shall cure a minimum of seven (7) days prior to standing poles.
4. All underground conduit shall be schedule 40 rigid polyvinyl chloride installed 24 inches to 30 inches below finished grade with exception for loop stub out conduits which shall be schedule 40 rigid PVC which shall be located 6 inches to 12 inches below the curb base.
5. All conduit runs shall be inspected by the City of Phoenix Traffic Signal locators or foremen before being covered. All traffic signal pole bases shall be inspected by

the traffic signal locators or foremen before being paved. The contractor shall contact the appropriate job foreman to request inspection or call 262-6204 and request inspection by traffic signal locator.

6. Traffic signal poles, mast arms, signal heads, pedestrian heads, pedestrian push buttons, controllers and electrical service panels and any and all related traffic signal equipment shall be installed as indicated on the approved project plans. The City will not supply any wire or cable for these projects.
7. A qualified journeyman electrician, who has successfully completed a recognized 4-year electrical apprenticeship program, or equivalent training, shall be on site at all times during the construction/installation of traffic signal equipment (i.e., all items cited in No. 4 above, as well as the pulling of conductors). Conductor splices shall only be made by said journeyman electrician, or by a person enrolled in a recognized 4-year electrical apprenticeship program, while under the direct supervision of the journeyman.
8. Equipment cited in No. 4 above may be picked up from the Traffic Signal Shop, 2631 South 22nd Avenue, thirty (30) days after receipt of a written list of required items and quantities. Incidental material, including required wire and cable, not specifically cited in No. 4 above, will not be supplied by the City. Mechanical devices and personnel for loading equipment onto vehicles of transport shall be provided by the party picking up such equipment. All equipment and procedures shall conform to OSHA regulations.
9. Foundation bolts and bolt cages may be secured from the City as in No. 6 above. Conductor wires, other than IMSA cable used in the signal poles shall be THHN/THWN #14AWG and will not be supplied by the City. Power service shall be 3-wire, #8 AWG or as specified. Shielded cable for Telco and loop detector lead-ins shall be IMSA No. 50-2 1984, AWG #16 stranded. IMSA multi-conductor cable as specified in the project plans shall be used. The City will not supply any wire or cable required on these projects.
10. The City of Phoenix shall be reimbursed, at cost, for all equipment and materials supplied in accordance with Nos. 4, 6, and 7 above.
11. Installation of signal heads and pedestrian heads shall conform to the Standard Mounting Detail. All heads shall be covered until activation, except 12-inch mast-arm heads, which shall NOT be installed until the day of activation. These coverings must be maintained in good repair.
12. When all equipment and wiring are in place and ready to be activated:

First: Give the Traffic Signal Shop forty-eight (48) hours advance notification (262-6733).

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- Second: Have equipment and wiring inspected and approved by the Traffic Signal Shop.
 - Third: Provide for off-duty Police Officer control of the intersection at the time of activation.
 - Fourth: Make necessary conduit splices and pull in new conductors throughout entire conduit run (i.e., junction box to junction box). At existing signals, City forces will then splice the conductors in the junction boxes, thereby deactivating the old equipment and activating the new equipment. At new signals, the developer/contractor shall make conductor splices, as in No. 5 above.
13. Any existing equipment identified by the Traffic Signal Shop as salvageable shall be removed and delivered, in good order, to 2631 South 22nd Avenue and unloaded where designated. A credit will be made against the cost cited in No. 8 above for returned equipment, less a 20% handling charge. No used IMSA cable will be accepted as salvageable for credit.
 14. Remnants of nonused signal equipment, foundations, conduits, junction boxes, etc., not identified in No. 11 above shall be removed and properly discarded by the developer/contractor.

INDUCTIVE LOOP SPECIFICATION

FOR ASPHALT INSTALLATION

Materials

Loop lead-in shielded cable shall be Two Conductor No. 16 AWG, IMSA Spec. No. 50-2, Clifford of Vermont (Part No. IP-16 T191 50-2) or approved equal.

Loop conductors shall be #14 AWG stranded, XHHW single-conductor. (IMSA Specification No. 51-3, 1984)

Slot sealant shall be 3-M detector Loop Sealant.

Installation and Testing

Lead-in cables shall be installed continuous and unbroken as indicated on the conductor schedule and the approved project plans, from the designated junction box into the controller cabinet. A minimum of five (5) feet of slack shall be provided in the controller cabinet and a minimum of three (3) feet of slack shall be provided in each junction box.

Slots and cores shall be saw cut and drilled into the pavement in the manner depicted on the Quadrupole Loop Configuration Detail and positioned in accordance with the approved project plans. Slots shall be one-fourth (1/4) inch wide and deep enough to provide a minimum of two inches of sealant coverage. Drill cores shall be two and one-half (2.5) inches in diameter and two and one-half (2.5) inches deep. Slots shall be blown out and dried before installing loop conductors.

Loop conductors shall be installed and tested ONLY in the presence of an authorized representative of the City of Phoenix Traffic Signal Shop. Conductors installed without said representative in attendance, for any reason, shall be removed from the pavement and new conductors installed, all at the developer's expense. Each loop slot shall have the number of conductors laid in the directions indicated on the loop configuration detail. The beginning conductor shall be banded in the junction box with the symbol "S" and a minimum of three (3) feet of slack for each conductor shall be provided in each junction box.

Loop installations shall be made permanent (sealed) ONLY after successful testing. The loop conductors shall be temporarily spliced to the lead-in cables, as directed by the City representative, and each loop circuit shall then be tested at the controller cabinet.

1. Megger: A 600-volt megger test shall measure not less than ten (10) megohms resistance to ground.

2. Continuity: Loop circuit resistance shall not exceed two (2) ohms.

After successful testing, the loop conductor/lead-in cable splices shall be made permanent and the loop slots sealed. Conductor/lead-in splices shall be secured with wire nuts and then injected with a clear silicon sealant. Sealant shall be injected into all slots and, before setting, surplus sealant shall be struck off flush with and removed from the roadway surface.

The developer shall warrant both materials and installation of all loop conductors and lead-ins for a period of twelve (12) months following date of initial installation.

INDUCTIVE LOOP SPECIFICATION FOR CONCRETE INSTALLATION

Materials

Loop lead-in shielded cable shall be Two Conductor No. 16 AWG, IMSA Spec. No. 50-2, Clifford of Vermont (Part No. IP-16 T191 50-2) or approved equal.

Loop conductors shall be PYROTENAX M.I. Cable No. 309/4 LH.

Slot sealant shall be 3-M detector Loop Sealant.

Installation and Testing

All specifications for the installation and testing of loops installed in asphalt shall be followed except where noted.

1. Minimum of 0.5 inch wide saw cut (preferably cut within 48 hours of concrete pour).
2. Saw cuts shall be installed 2.5 inches deep or as denoted on the approved project plans.
3. All multiple saw cuts shall be connected through a 2.5 inch diameter by 2.5 inch deep core hole.
4. Loop shall be wired with PYROTENAX 4-conductor, mineral-insulated cable (distributor is PYROTENAX U.S.A., Inc.).
5. One 3 inch Schedule 40 PVC stub-out shall be provided for every two loops installed.
6. Each loop shall have its own separate lead-in saw cut to the stub-out.
7. Each loop shall have one turn installed as per conductor placement detail.
8. City of Phoenix shall make up cable ends as needed.
9. If loops are to be installed at a future time, all saw cuts in concrete shall be filled with sand to preserve the integrity of the saw cut.

2.17 DELIVERY:

Delivery shall be F.O.B. Destination within seven (7) days of receipt of Using Agency purchase order, to any delivery location within Maricopa County.

2.18 EXPEDITED DELIVERY:

2.18.1 If the Using Agency determines that rush shipping or other alternate shipping is required, it shall notify the Contractor. The Contractor shall determine any additional costs associated with such delivery terms and communicate that cost to the Using Agency.

2.18.2 The Using Agency shall not advise the Contractor to proceed with an expedited shipment until acceptable terms are agreed upon and a purchase order is issued. Upon agreeing to the additional costs, the Using Agency shall advise the Contractor to proceed.

2.18.3 Upon receipt of material(s) and invoicing, the Using Agency shall ensure that any additional charges are in compliance with and do not exceed agreed to costs. The Using Agency shall retain all documents related to these costs within the agency purchase file.

2.19 SHIPPING DOCUMENTS:

A packing list or other suitable shipping document shall accompany each shipment and shall include the following:

2.19.1 Contract Serial number.

2.19.2 Contractor's name and address.

2.19.3 Using Agency name and address.

2.19.4 Using Agency purchase order number.

2.19.5 A description of product(s) shipped, including item number(s), quantity (ies), number of containers and package number(s), as applicable.

2.20 TESTING:

Unless otherwise specified, materials purchased will be inspected by the Using Agency to ensure the materials meet the quality and quantity requirements of the Specifications. When deemed necessary by the County, samples of the materials may be taken at random from stock received for submission to a commercial laboratory or other appropriate agency for analysis and tests as to whether the materials conform in all respects to the Specifications. In cases where commercial laboratory reports indicate that the materials do not meet the Specifications, the expense of such analysis shall be borne by the Contractor.

2.21 ACCEPTANCE:

Upon delivery and successful inspection, the material(s) shall be deemed accepted and the warranty period shall begin. All documentation shall be completed prior to final acceptance.

Upon delivery and/or successful installation, the system(s) shall be deemed accepted and the warranty period shall begin. All documentation shall be completed prior to final acceptance.

2.22 FACTORY AUTHORIZED SERVICE AVAILABILITY:

The Contractor shall have and maintain a local factory authorized service facility within the Phoenix, Arizona metropolitan area. The facility shall be capable of supplying and installing component parts, troubleshooting, repairing and maintaining the material(s). Minimum service hours shall be from 8:00 A.M. through 5:00 P.M., Arizona Time, Monday through Friday.

2.23 BRAND NAME:

The County reserves the right to request samples to determine quality and acceptability of materials bid by Contractor. In some cases, brand names have been listed in order to define the desired quality and are not intended to be restrictive or to limit competition. Materials substantially equivalent to those designated shall qualify for consideration.

2.24 INVOICES AND PAYMENTS:

2.24.1 The Contractor shall submit two (2) legible copies of their detailed invoice before payment(s) can be made. At a minimum, the invoice must provide the following information:

- 2.24.1.1 Company name, address and contact
- 2.24.1.2 County bill-to name and contact information
- 2.24.1.3 Contract Serial Number
- 2.24.1.4 County purchase order number
- 2.24.1.5 Invoice number and date
- 2.24.1.6 Payment terms
- 2.24.1.7 Date of service or delivery
- 2.24.1.8 Quantity
- 2.24.1.9 Contract Item number(s)
- 2.24.1.10 Description of Purchase (product or services)
- 2.24.1.11 Pricing per unit of purchase
- 2.24.1.12 Extended price
- 2.24.1.13 Arrival and completion time
- 2.24.1.14 Total Amount Due

Problems regarding billing or invoicing shall be directed to the using agency as listed on the Purchase Order.

2.24.2 Payment will be made to the Contractor by Accounts Payable through the Maricopa County Vendor Express Payment Program. This is an Electronic Funds Transfer (EFT) process. After Award the Contractor shall fill out an EFT Enrollment form (to be provided by the Procurement Officer) or as located on the County Department of Finance Website as a fillable PDF document (www.maricopa.gov/finance/).

2.24.3 EFT payments to the routing and account numbers designated by the Contractor will include the details on the specific invoices that the payment covers. The Contractor is required to discuss remittance delivery capabilities with their designated financial institution for access to those details.

2.25 TAX:

Tax shall not be levied against labor. Sales/use tax will be determined by County. Tax will not be used in determining low price.

3.0 SPECIAL TERMS & CONDITIONS:

3.1 CONTRACT TERM:

This Invitation for Bid is for awarding a firm, fixed-price purchasing contract to cover a three (3) year period.

3.2 OPTION TO EXTEND:

The County may, at their option and with the approval of the Contractor, extend the period of this Contract up to a maximum of three (3) years (or, at the County's sole discretion, extend the contract on a month to month bases for a maximum of six (6) months after expiration). The Contractor shall be notified in writing by the Materials Management Department of the County's intention to extend the contract period at least thirty (30) calendar days prior to the expiration of the original contract period.

3.3 PRICE ADJUSTMENTS:

Any requests for reasonable price adjustments must be submitted sixty (60) days prior to the Contract expiration date. Requests for adjustment in cost of labor and/or materials must be supported by appropriate documentation. If County agrees to the adjusted price terms, County shall issue written approval of the change. The reasonableness of the request will be determined by comparing the request with the Consumer Price Index or by performing a market survey.

3.4 INDEMNIFICATION AND INSURANCE:

3.4.1 INDEMNIFICATION

To the fullest extent permitted by law, Contractor shall defend, indemnify, and hold harmless County, its agents, representatives, officers, directors, officials, and employees from and against all claims, damages, losses and expenses, including, but not limited to, attorney fees, court costs, expert witness fees, and the cost of appellate proceedings, relating to, arising out of, or alleged to have resulted from the negligent acts, errors, omissions or mistakes relating to the performance of this Contract. Contractor's duty to defend, indemnify and hold harmless County, its agents, representatives, officers, directors, officials, and employees shall arise in connection with any claim, damage, loss or expense that is attributable to bodily injury, sickness, disease, death, or injury to, impairment, or destruction of property, including loss of use resulting there from, caused by any negligent acts, errors, omissions or mistakes in the performance of this Contract including any person for whose acts, errors, omissions or mistakes Contractor may be legally liable.

The amount and type of insurance coverage requirements set forth herein will in no way be construed as limiting the scope of the indemnity in this paragraph.

The scope of this indemnification does not extend to the sole negligence of County.

3.4.2 INSURANCE REQUIREMENTS

Contractor, at Contractor's own expense, shall purchase and maintain the herein stipulated minimum insurance from a company or companies duly licensed by the State of Arizona and possessing a current A.M. Best, Inc. rating of B++6. In lieu of State of Arizona licensing, the stipulated insurance may be purchased from a company or companies, which are authorized to do business in the State of Arizona, provided that said insurance companies meet the approval of County. The form of any insurance policies and forms must be acceptable to County.

All insurance required herein shall be maintained in full force and effect until all work or service required to be performed under the terms of the Contract is satisfactorily completed and formally accepted. Failure to do so may, at the sole discretion of County, constitute a material breach of this Contract.

Contractor's insurance shall be primary insurance as respects County, and any insurance or self-insurance maintained by County shall not contribute to it.

Any failure to comply with the claim reporting provisions of the insurance policies or any breach of an insurance policy warranty shall not affect the County's right to coverage afforded under the insurance policies.

The insurance policies may provide coverage that contains deductibles or self-insured retentions. Such deductible and/or self-insured retentions shall not be applicable with respect to the coverage provided to County under such policies. Contractor shall be solely responsible for the deductible and/or self-insured retention and County, at its option, may require Contractor to secure payment of such deductibles or self-insured retentions by a surety bond or an irrevocable and unconditional letter of credit.

County reserves the right to request and to receive, within 10 working days, certified copies of any or all of the herein required insurance policies and/or endorsements. County shall not be obligated, however, to review such policies and/or endorsements or to advise Contractor of any deficiencies in such policies and endorsements, and such receipt shall not relieve Contractor from, or be deemed a waiver of County's right to insist on strict fulfillment of Contractor's obligations under this Contract.

The insurance policies required by this Contract, except Workers' Compensation, and Errors and Omissions, shall name County, its agents, representatives, officers, directors, officials and employees as Additional Insureds.

The policies required hereunder, except Workers' Compensation, and Errors and Omissions, shall contain a waiver of transfer of rights of recovery (subrogation) against County, its agents, representatives, officers, directors, officials and employees for any claims arising out of Contractor's work or service.

Contractor is required to procure and maintain the following coverages indicated by a checkmark:

3.4.2.1 Commercial General Liability:

Commercial General Liability insurance and, if necessary, Commercial Umbrella insurance with a limit of not less than \$1,000,000 for each occurrence, \$2,000,000 Products/Completed Operations Aggregate, and \$2,000,000 General Aggregate Limit. The policy shall include coverage for bodily injury, broad form property damage, personal injury, products and completed operations and blanket contractual coverage, and shall not contain any provision which would serve to limit third party action over claims. There shall be no endorsement or modification of the CGL limiting the scope of coverage for liability arising from explosion, collapse, or underground property damage.

3.4.2.2 Automobile Liability:

Commercial/Business Automobile Liability insurance and, if necessary, Commercial Umbrella insurance with a combined single limit for bodily injury and property damage of not less than \$1,000,000 each occurrence with respect to any of the Contractor's owned, hired, and non-owned vehicles assigned to or used in performance of the Contractor's work or services under this Contract.

3.4.2.3 Workers' Compensation:

Workers' Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction of Contractor's employees engaged in the performance of the work or services under this Contract; and Employer's Liability insurance of not less than \$100,000 for each accident, \$100,000 disease for each employee, and \$500,000 disease policy limit.

Contractor waives all rights against County and its agents, officers, directors and employees for recovery of damages to the extent these damages are covered by the Workers' Compensation and Employer's Liability or commercial umbrella liability insurance obtained by Contractor pursuant to this Contract.

3.5 Certificates of Insurance.

3.5.1 Prior to commencing work or services under this Contract, Contractor shall furnish the County with certificates of insurance, or formal endorsements as required by the Contract in the form provided by the County, issued by Contractor's insurer(s), as evidence that policies providing the required coverage, conditions and limits required by this Contract are in full force and effect. Such certificates shall identify this contract number and title.

In the event any insurance policy (ies) required by this contract is (are) written on a "claims made" basis, coverage shall extend for two years past completion and acceptance of Contractor's work or services and as evidenced by annual Certificates of Insurance.

If a policy does expire during the life of the Contract, a renewal certificate must be sent to County fifteen (15) days prior to the expiration date.

3.5.1.1 Cancellation and Expiration Notice.

Insurance required herein shall not be permitted to expire, be canceled, or materially changed without thirty (30) days prior written notice to the County.

3.6 NO GUARANTEED QUANTITIES.

The Contractor understands and hereby acknowledges that the County makes no representations nor guarantees the Contractor any minimum or maximum number of units of product(s) to be provided under this Contract

3.7 ORDERING AUTHORITY.

3.7.1 The Contractor should understand that any request for purchase of product(s) shall be accompanied by a valid purchase order, issued by Materials Management.

3.8 County departments, cities, other counties, schools and special districts, universities, nonprofit educational and public health institutions may also purchase from under this Contract at their discretion and/or other state and local agencies (Customers) may procure the products under this Contract by the issuance of a purchase order to the Respondent. Purchase orders must cite the Contract number.

3.9 Contract award is in accordance with the Maricopa County Procurement Code. All requirements for the competitive award of this Contract have been met. A purchase order for the product(s) is the only document necessary for Customers to purchase and for the Contractor to proceed with delivery of product(s) available under this Contract.

3.9.1 Any attempt to represent any product not specifically awarded under this Contract is a violation of the Contract. Any such action is subject to the legal and contractual remedies available to the County, inclusive of, but not limited to, Contract cancellation, suspension and/or debarment of the Contractor.

3.10 INQUIRIES AND NOTICES:

All inquiries concerning information herein shall be addressed to:

MARICOPA COUNTY
DEPARTMENT OF MATERIALS MANAGEMENT
ATTN: CONTRACT ADMINISTRATION
320 W. LINCOLN ST.
PHOENIX, AZ 85003

Administrative telephone inquiries shall be addressed to:

WALT PRICE, PROCUREMENT OFFICER, 602-506-3454
(wprice@mail.maricopa.gov)

Technical telephone inquiries shall be addressed to:

JIM BAKER, DEPARTMENT OF TRANSPORTATION, 602-506-3454
(JimBaker@mail.maricopa.gov)

Inquiries may be submitted by telephone but must be followed up in writing. No oral communication is binding on Maricopa County.

3.11 EVALUATION CRITERIA.

3.11.1 The evaluation of bids shall be based on, but will not be limited to, the following:

3.11.1.1 Compliance with specifications.

3.11.1.2 Price.

3.11.1.3 Determination of responsibility.

3.12 the County reserves the right to award in whole or in part, by item or group of items, by section or geographic area, or make multiple awards, where such action serves the County's best interest.

3.13 SUBMISSION PRICE CLARITY.

For reasons of clarity all submissions of pricing (Attachment A) shall be priced in the same unit (size, volume, quantity, weight, etc.) as the bid specifications request. Submissions (bids) failing to comply with this requirement may be declared non-responsive.

3.14 INSTRUCTIONS FOR PREPARING AND SUBMITTING BIDS.

Contractors shall provide one (1) original hard copy (labeled), one (1) extra hard copy and two (2) electronic copies, including pricing, on CD. Contractors are to identify their responses with the bid serial number, title and return address to Maricopa County, Department of Materials Management, 320 West Lincoln, Phoenix, Arizona 85003. **The owner, corporate official or partner who has been authorized to make such commitments must sign bids.**

3.15 TECHNICAL AND DESCRIPTIVE SALES LITERATURE:

The Contractor shall provide copies of its sales literature and brochures and copies of any manufacturer's technical and/or descriptive literature regarding the material(s) the Contractor proposes to provide. Literature shall include sufficient, in-detail, to allow full and fair evaluation of the material(s) submitted, and must be included with the bid. Failure to include this information may result in the bid being rejected.

3.16 ADDITIONAL PRICING:

The Contractor is strongly encouraged to offer additional pricing for related items, materials, components which are not specifically addressed as line items in this solicitation. Pricing offered should be noted on the pricing pages of the Contractor's bid in the format requested. Two (2) sets of catalogs/pricing documents shall accompany any additional pricing offered.

3.17 CONTRACTOR REVIEW OF DOCUMENTS.

The Contractor must review its Bid submission to assure the following requirements are met.

3.17.1 **Mandatory:** One (1) original hardcopy (labeled), one (1) extra hard copy and two (2) electronic copies of pricing on a CD;

3.17.2 **Mandatory:** Attachment "A", Pricing;

3.17.3 **Mandatory:** Attachment "B", Agreement; and

3.17.4 **Mandatory:** Attachment "C", References.

3.17.5 **Mandatory:** Technical and Descriptive Sales Literature.

3.17.6 Samples, if required.

3.18 POST AWARD MEETING:

The Contractor shall be required to attend a post-award meeting with the Using Agency to discuss the terms and conditions of this Contract. This meeting will be coordinated by the Procurement Officer of the Contract.

CPC CONSTRUCTION INC, 1534 W SCOTT AVE, GILBERT, AZ 85233

PRICING SHEET C631002/B0605756 NIGP 96882

OTHER GOV'T. AGENCIES MAY USE THIS CONTRACT: __X__ YES ____NO

1.0 PRICING:

		Asphalt Installation (Non City of Phoenix)		Concrete Installation (Non City of Phoenix)		Concrete Installation (City of Phoenix)	
1.1 Count Station Detectors		Unit Price		Unit Price		Unit Price	
1.1.1.	6' x 6' Standard	\$375.00	/Each	\$450.00	/Each	\$475.00	/Each
1.2 Presence Detectors							
1.2.1	6' x 12' Quadruple	\$435.00	/Each	\$530.00	/Each	\$685.00	/Each
1.2.2	6' x 20' Quadruple	\$465.00	/Each	\$560.00	/Each	\$745.00	/Each
1.2.3	6' x 30' Quadruple	\$495.00	/Each	\$590.00	/Each	\$870.00	/Each
1.2.4	6' x 40' Quadruple	\$525.00	/Each	\$685.00	/Each	\$960.00	/Each
1.2.5	6' x 50' Quadruple	\$625.00	/Each	\$840.00	/Each	\$1,025.00	/Each
1.2.6	6' x 70' Quadruple	\$825.00	/Each	\$1,100.00	/Each	\$1,180.00	/Each
1.2.7	Pull Box(#5)Installed	\$325.00	/Each	\$325.00	/Each	\$325.00	/Each
1.2.8 2" Conduit Installed(Native Landscape)							
1.2.8.1	1' - 20"	\$35.00	/Foot	\$35.00	/Foot	\$35.00	/Foot
1.2.8.2	21' - 100'	\$33.00	/Foot	\$33.00	/Foot	\$33.00	/Foot
1.2.8.3	OVER 100'	\$30.00	/Foot	\$30.00	/Foot	\$30.00	/Foot
1.2.9 2" Conduit Installed(Grass Landscape)							
1.2.9.1	1' - 20'	\$35.00	/Foot	\$35.00	/Foot	\$35.00	/Foot
1.2.9.2	21' - 100'	\$33.00	/Foot	\$33.00	/Foot	\$33.00	/Foot
1.2.9.3	OVER 100'	\$28.00	/Foot	\$28.00	/Foot	\$28.00	/Foot
1.2.10 2" Conduit Installed(Desert Landscape)							
1.2.10.1	1' - 20'	\$35.00	/Foot	\$35.00	/Foot	\$35.00	/Foot
1.2.10.2	21' - 100'	\$33.00	/Foot	\$33.00	/Foot	\$33.00	/Foot
1.2.10.3	OVER 100'	\$30.00	/Foot	\$30.00	/Foot	\$30.00	/Foot

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1.2.11 2" Conduit Installed					
Under Driveways	\$58.00	/Foot	\$58.00	/Foot	\$58.00 /Foot
1.3 Boring Under Roadway, 3" PVC	\$85.00	/L.F.	\$85.00	/L.F.	\$85.00 /L.F.
(Agency to provide pothole locations)					
1.4 Loop Detector Lead-In Sawcut	\$2.50	/IN/LF	\$3.50	/IN/LF	\$3.50 /IN/LF
1.5 Trenching/Concrete Encasing	\$58.00	/L.F.	\$58.00	/L.F.	\$58.00 /L.F.
1.6 Additional Items					
1.6.1 Traffic Control (additional lane closure, per lane)	\$100.00	/Each	\$100.00	/Each	\$100.00 /Each
1.6.2 Traffic Control (uniformed off duty police officer)	\$50.00	/Hour	\$50.00	/Hour	\$50.00 /Hour
1.6.3 Boring Only (pothole location)	\$300.00	/Each	\$300.00	/Each	\$300.00 /Each
1.6.4 Additional Services Offered (Vendor to Itemize)					
<u>Remove & Replace C&G</u>	\$35.00	/L.F.	\$0.00	/Each	\$0.00 /Each
<u>Remove & Replace S/W</u>	\$15.00	/S.F.	\$0.00	/Each	\$0.00 /Each
<u>Remove & Replace ADA Ramp</u>	\$20.00	/S.F.	\$0.00	/Each	\$0.00 /Each
<u>Install Truncated Domes</u>	\$45.00	/S.F.	\$0.00	/Each	\$0.00 /Each
	\$0.00	/Each	\$0.00	/Each	\$0.00 /Each

CPC CONSTRUCTION INC, 1534 W SCOTT AVE, GILBERT, AZ 85233

Terms:	Net 30
Vendor Number:	W000003347 X
Telephone Number:	480-839-6300
Fax Number:	480-820-9958
Contact Person:	Troy Colby
E-mail Address:	dtcolby@yahoo.com
Certificates of Insurance	Required
Contract Period:	To cover the period ending October 31, 2009.